

ABSTRACT

Disclosed is a method for identifying activators of a transition metal-dependent repressor of virulence gene expression in infectious prokaryotic pathogens. The method utilizes genetic circuitry that represents the response of a given prokaryote to nutritional stress and the expression of genes that contribute to the establishment of the infectious process. The exposure of recombinant cells or a cell-free system containing the genetic circuitry to a non-metal ion test substance that activates the repressor produces a detectable response. The method is applicable for any prokaryote employing metal ion-dependent repressors to regulate specific gene expression, specifically as it pertains to virulence determinant expression.